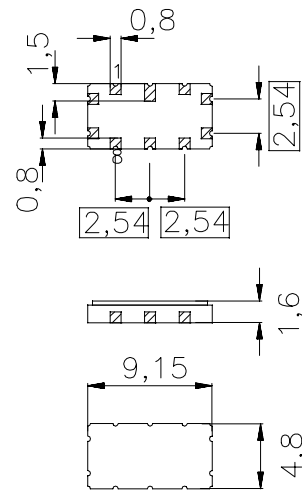# SAW Components

Data Sheet B4956

Ceramic package    **QCC10B**

## Features

- IF filter for mobile telephone
- Channel selection in CDMA systems
- Balanced or unbalanced operation possible
- High rejection, very small size
- Low amplitude ripple
- Filter surface passivated
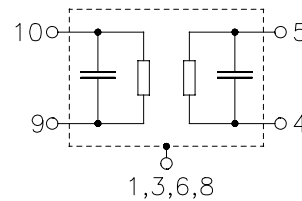- Package for **S**urface **M**ounted **T**echnology (**SMT**)

## Terminals

- Gold plated

Dimensions in mm, approx. weight 0,23 g

## Pin configuration

| | |
|---|---|
| 10 | Input |
| 9 | Balanced input or ground |
| 5 | Output |
| 4 | Balanced output |
| 2, 7 | To be grounded |
| 1, 3, 6, 8 | Case ground |

| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B4956 | B39850-B4956-Z710 | C61157-A7-A49 | F61074-V8172-Z000 |

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

## Maximum ratings

| Operable temperature range | $T$ | – 40/+ 85 | ˚C | |
|---|---|---|---|---|
| Storage temperature range | $T_{stg}$ | – 40/+ 85 | ˚C | |
| DC voltage | $V_{DC}$ | 3 | V | |
| ESD voltage | $V^*_{ESD}$ | 100 | V | Machine Model, 10 pulses |
| Source power | $P_s$ | 10 | dBm | |

\* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses

| **SAW Components** | **B4956** |
|---|---|
| **Low-Loss Filter for Mobile Communication** | **85,38 MHz** |

**Data Sheet**

## Characteristics

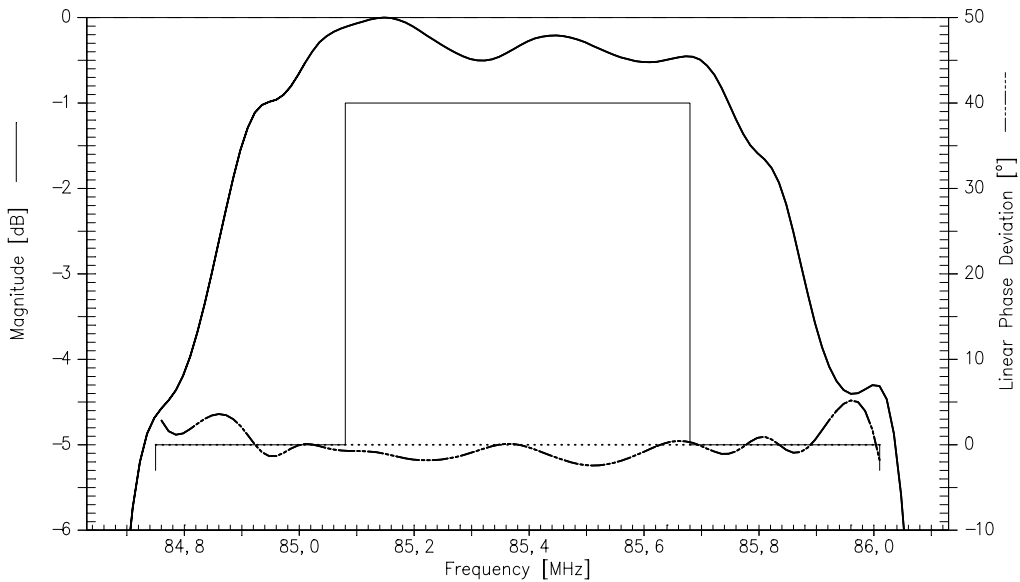| Operating temperature range: | $T$ | = | $-35\,°C .. +85\,°C$ |
|---|---|---|---|
| Terminating source impedance: | $Z_S$ | = | $1570\ \Omega \parallel 361\ nH$ |
| Terminating load impedance: | $Z_L$ | = | $500\ \Omega \parallel 258\ nH$ |

| | | **min.** | **typ.** | **max.** | |
|---|---|---|---|---|---|
| **Nominal frequency** | $f_N$ | — | 85,38 | — | MHz |
| **Minimum insertion attenuation** (without loss in matching network) | $\alpha_{min}$ | — | 9,0 | 10,8 | dB |
| **Minimum insertion attenuation** (with loss in matching network according to figure 1) | $\alpha_{min}$ | — | 11,3 | 12,8 | dB |
| **Amplitude ripple** | $\Delta\alpha$ | | | | |
| $f_N - 0,3$ MHz ... $f_N + 0,3$ MHz | | — | 0,4 | 1,0 | dB |
| **Phase linearity** (rms deviation) | | | | | |
| $f_N - 0,615$ MHz ... $f_N + 0,615$ MHz | | — | 2,0 | 3,5 | ° |
| **Relative attenuation** (relative to $\alpha_{min}$) | $\alpha_{rel}$ | | | | |
| $f_N \pm 0,63$ MHz | | — | 4,5 | 5,0 | dB |
| $f_N - 0,9$ MHz | | 36 | 40 | — | dB |
| $f_N + 0,9$ MHz | | 36 | 42 | — | dB |
| $f_N - 1,7$ MHz | | 37 | 42 | — | dB |
| $f_N + 1,7$ MHz | | 37 | 48 | — | dB |
| $f_N - 9,0$ MHz ... $f_N - 3,0$ MHz | | 39 | 42 | — | dB |
| $f_N - 3,0$ MHz ... $f_N - 1,7$ MHz | | 37 | 42 | — | dB |
| $f_N - 1,7$ MHz ... $f_N - 0,9$ MHz | | 35 | 38 | — | dB |
| $f_N + 0,9$ MHz ... $f_N + 1,7$ MHz | | 34 | 40 | — | dB |
| $f_N + 1,7$ MHz ... $f_N + 7,0$ MHz | | 33 | 36 | — | dB |
| $f_N + 7,0$ MHz ... $f_N + 9,0$ MHz | | 40 | 46 | — | dB |

**Normalized transfer function** (balanced/balanced):
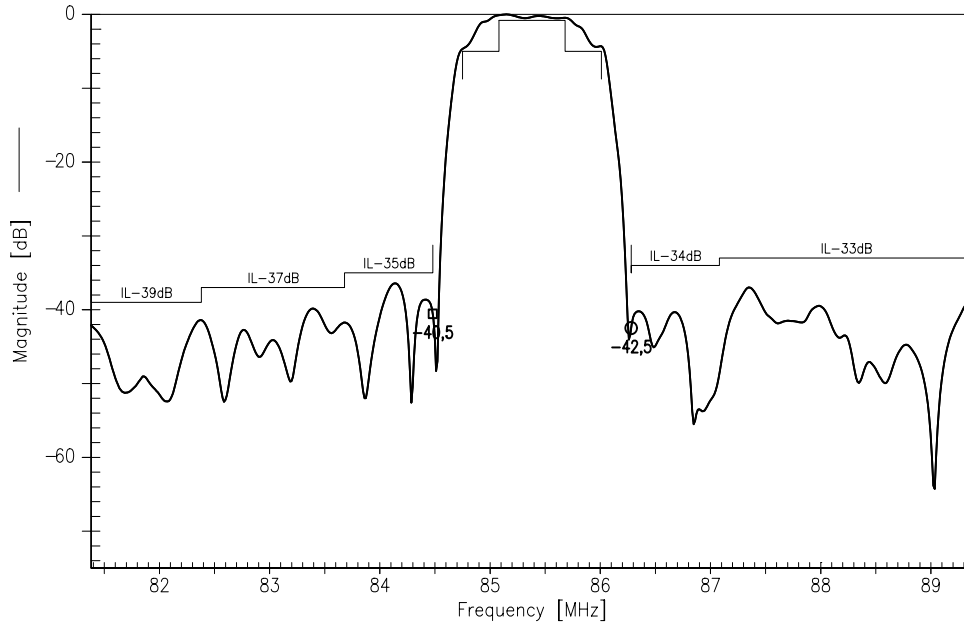


**Normalized transfer function** (passband, balanced/balanced):

**Normalized transfer function** (wideband, balanced/balanced):
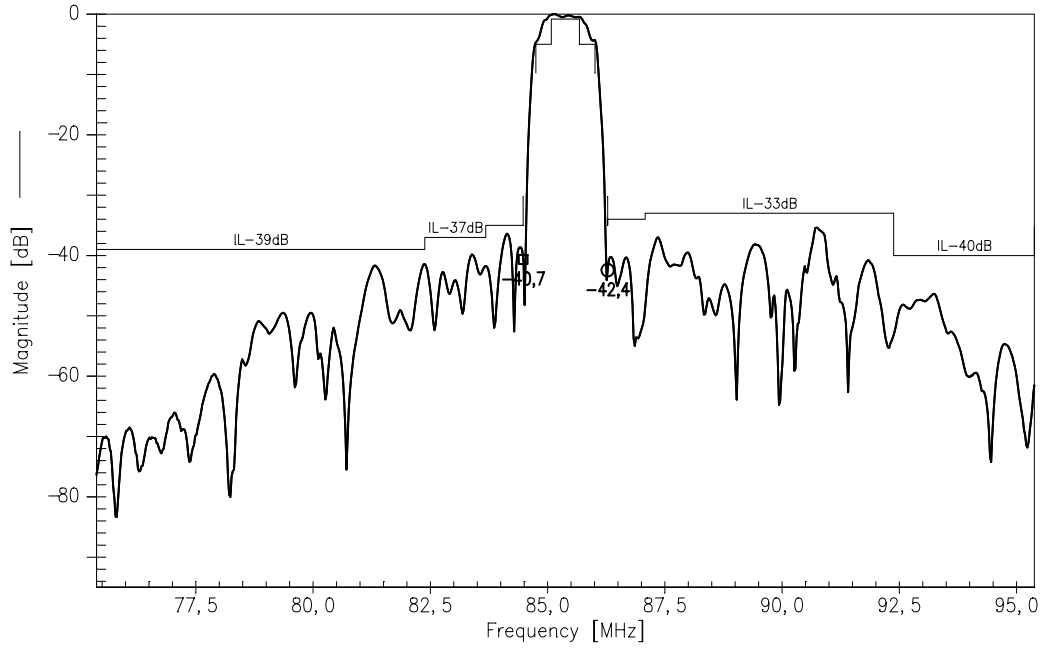
**Figure 1: Matching network for 1570$\Omega$ / 500$\Omega$ configuration**



balanced input: pins 9,10
balanced output: pins 4,5
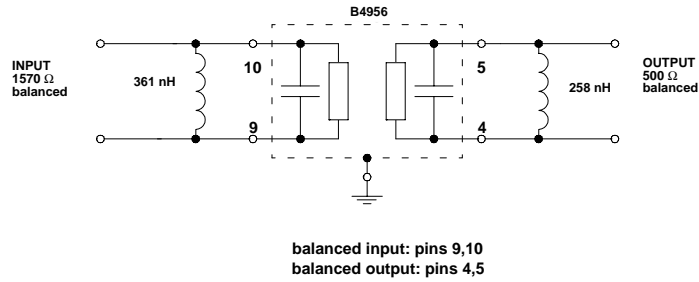
**Figure 2: Test matching network**

(Element values depend on pcb layout)



balanced input: pins 9,10
balanced output: pins 4,5